

What is claimed is:

1 1. Apparatus for providing information in response to a query where the query and the
2 response thereto have defined forms, the query being addressed to a database table having at
3 least one row, each row having at least one named field, the query including at least one field
4 name to specify the information to be provided in the response and an indication of a manner
5 of selecting a row containing the information from the database table,
6 the apparatus comprising:
7 a virtual database service; and
8 an information source for the information to be provided which does not use the named
9 field to identify the information to be provided,
10 the virtual database service receiving the query, using the indication of the manner of selecting
11 a row to obtain the information to be provided from the information source, and providing the
12 information in the response,
13 whereby the apparatus presents a virtual database table of the form addressed by the query to a
14 source of the query .

1 2. The apparatus set forth in claim 1 wherein:
2 the indication of a manner of selecting a row includes a selection value; and
3 the information source provides a component of the information to be provided in
4 response to a match between the selection value and a pattern that matches a plurality of
5 values and is accessible to the information source.

1 3. The apparatus set forth in claim 1 wherein:
2 the query is an SQL query addressing the database table;
3 the field name is contained in a SELECT clause in the query; and
4 the indication of the manner of selecting a row is contained in a WHERE clause in the
5 query.

1 4. The apparatus set forth in claim 1 wherein:
2 the information source is an access evaluator which determines whether a user may
3 have access to an information resource;

4 the manner of selecting the row includes information from which the user and the
5 information resource may be determined; and
6 the provided information includes an indication of whether the user determined from the
7 information may access the information resource determined therefrom.

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1 5. The apparatus set forth in claim 4 wherein:

2 the access evaluator determines whether the user may have access to the information
3 resource by considering one or more access policies, each access policy indicating whether a
4 user group may have access to a set of information resources and access by the user to the
5 information resource being allowed when the access policies for the user groups to which the
6 user belongs and the sets of information resources to which the information resource belongs
7 so indicate; and

8 the manner of selecting the row contains membership information about the user from
9 which membership of the user in a user group may be determined.

1 6. The apparatus set forth in claim 5 wherein:

2 the access evaluator uses the membership information to determine membership of the
3 user in a user group.

1 7. The apparatus set forth in claim 6 wherein:

2 the access evaluator determines that there may be a user group such that membership in
3 the user group would give the user access to the information resource; and

4 the provided information indicates a method of providing further information about the
5 user in a further query from which the user's membership in the user group can be determined.

1 8. The apparatus set forth in claim 7 wherein:

2 the further information includes authentication information which may be used to
3 validate the user's identity.

1 9. The apparatus set forth in claim 8 further comprising:

2 an additional information source that is an authenticator, the authenticator using the
3 authentication information to validate the user's identity.

1 10. The apparatus set forth in claim 9 wherein:

2 the response to the further query provides an indication whether the user's identity is
3 valid.

1 11. The apparatus set forth in claim 5 further comprising:

2 an additional information source that is a user profile information source which
3 provides additional information about the user;

4 the information about the user includes a user information retrieval method
5 specification that specifies how the user profile information source provides the additional
6 information; and

7 the access evaluator uses at least some of the additional information to determine
8 membership of the user in the user group.

1 12. The apparatus set forth in claim 5 further comprising:

2 an additional information source that is an authenticator which validates the identity of
3 the user;

4 the authenticator uses the membership information to validate the identity of the user;
5 and

6 the access evaluator determines membership of the user in a user group only after the
7 authenticator has validated the user's identity.

1 13. The apparatus set forth in claim 4 further comprising:

2 an additional information source that is an authenticator which validates an identity of
3 the user;

4 the manner of selecting the row includes authentication information which the
5 authenticator uses to validate the user's identity; and

6 the provided information is obtained at least in part from the authenticator and includes
7 an indication of whether the user's identity is valid.

1 14. The apparatus set forth in claim 4 further comprising:

2 an additional information source that is a user profile information source which
3 provides additional information about the user;

- 4 the manner of selecting the row includes profile information gathering information
5 which indicates to the profile information source how to gather the profile information; and
6 the provided information is obtained at least in part from the profile information source
7 and includes the profile information.

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